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(FILE 'HOME' ENTERED AT 15:18:36 ON 18 JUN 2002)  
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FILE 'HCAPLUS' ENTERED AT 15:18:48 ON 18 JUN 2002

L1 0 S ACT4H1  
L2 0 S ACT4(L)H1  
L3 81 S ACT(L)4(L)H1  
L4 135 S ACT(L)4(L)H 1  
L5 1 S ACT4 (L) H 1  
L6 216 S L3-L5  
L7 0 S L6 AND MAB  
L8 2 S L6 AND MONOCLON?(L)ANTIBOD?  
L9 2 S (ACT4 OR ACT 4) (L) (H1 OR H 1)  
L10 2 S L8,L9  
L11 0 S HB11483  
L12 0 S HB 11483  
L13 0 S HBL106  
L14 0 S "HB L106"  
L15 6 S "L106"  
L16 1 S L15 AND MAB  
L17 3 S L15 AND MONOCLON?(L)ANTIBOD?  
L18 3 S L16,L17  
L19 1 S L18 AND PROTEIN  
L20 3 S L10,L19  
E GODFREY W/AU  
L21 23 S E3-E5,E7,E8  
E BUCK D/AU  
L22 95 S E3-E11,E19-E26  
E ENGLEMAN E/AU  
L23 126 S E3,E5,E8-E11  
L24 3 S L20 AND L21-L23  
L25 3 S L6,L15 AND L21-L23  
L26 3 S L24,L25  
L27 9 S L6,L15 AND (FUSION OR CHIMER? OR CLON? OR RECOMBIN? OR ENGINE  
L28 2 S L26 AND L27  
L29 3 S L26,L28  
L30 7 S L27 NOT L29  
L31 3 S RECEPTOR (L) (ACT4 OR ACT 4)  
L32 2 S L31 NOT 4/SC  
L33 3 S L29,L32

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 15:30:03 ON 18 JUN 2002  
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FILE COVERS 1907 - 18 Jun 2002 VOL 136 ISS 25  
FILE LAST UPDATED: 17 Jun 2002 (20020617/ED)

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jan.delaval@uspto.gov

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all tot 133

L33 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2002 ACS  
AN 1997:109742 HCAPLUS  
DN 126:130362  
TI Studies of the **L106 protein** and its gene: evidence that **L106** and OX-40 are homologous  
AU **Godfrey, Wayne; Buck, David**; Harara, Marwan; Benike, Claudia; **Engleman, Edgar**  
CS UK  
SO Leucocyte Typing V: White Cell Differ. Antigens, Proc. Int. Workshop Conf., 5th (1995), Meeting Date 1993, Volume 1, 1157-1160. Editor(s): Schlossman, Stuart F. Publisher: Oxford University Press, Oxford, UK. CODEN: 63WDAC  
DT Conference  
LA English  
CC 15-2 (Immunochemistry)  
AB In this report, the authors examd. the cellular reactivity of **monoclonal antibody L106** with PBMC and B-cell and T-cell lines. In addn., the authors report the biochem. properties of the surface glycoprotein recognized by **L106** in comparison with OX-40.  
ST **L106 protein** OX40 homolog  
IT CD4-positive T cell  
Rat  
(**L106** surface glycoprotein as human homolog for rat OX-40 antigen)  
IT Glycoproteins (specific **proteins** and subclasses)  
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)  
(**L106**; as human homolog for rat OX-40 antigen)  
IT Antigens  
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)  
(OX-40, rat; **L106** surface glycoprotein as human homolog for)  
  
L33 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2002 ACS  
AN 1995:938174 HCAPLUS  
DN 123:337455  
TI Ligand to a receptor on the surface of activated CD4+ T cells  
IN **Godfrey, Wayne; Engleman, Edgar George**  
PA Board of Trustees of the Leland Stanford Junior University, USA; Greaves, Carol Pauline  
SO PCT Int. Appl., 124 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM C12N015-12  
ICS C07K014-705; C07K019-00; C07K016-28; C12N015-85; C12N005-10; C12N005-08; A61K038-17; A61K039-395; G01N033-53; G01N033-543; G01N033-68  
CC 15-3 (Immunochemistry)  
Section cross-reference(s): 3  
FAN.CNT 2  
PATENT NO. KIND DATE APPLICATION NO. DATE

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PI WO 9521915 A1 19950817 WO 1995-GB238 19950206  
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US  
RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 6242566 B1 20010605 US 1994-195967 19940210  
CA 2183066 AA 19950817 CA 1995-2183066 19950206  
AU 9515836 A1 19950829 AU 1995-15836 19950206  
EP 741784 A1 19961113 EP 1995-907739 19950206  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE  
JP 09509826 T2 19971007 JP 1995-521040 19950206  
US 6156878 A 20001205 US 1997-881033 19970623  
AU 9918436 A1 19990506 AU 1999-18436 19990225  
US 2001044523 A1 20011122 US 2001-804200 20010313

PRAI US 1994-195967 A 19940210  
US 1993-147784 A 19931103  
AU 1995-15836 A3 19950206  
WO 1995-GB238 W 19950206

AB The invention relates to certain specific binding partners, in particular ligands and fragments, variants, mutants or derivs. for a **receptor** on the surface of activated CD4+ T-cells. Exemplary ligands are based on a ligand designated **ACT-4-L-h-1**. Fragments include extracellular domains of the ligand and certain binding moieties with specificity for the above-mentioned specific binding partners are also provided. Suitable binding moieties include humanized and human **antibodies** to the ligand. The invention further provides nucleic acid segments encoding and pharmaceutical compns. contg. such a specific binding partner or binding moiety as well as expression vectors and cell lines which include these. Compns. and methods comprising the specific binding partners or the binding moieties are useful for treatment of transplant rejection, graft-vs.-host reaction, autoimmune disease, inflammation, or infection by HTLV, HIV, or other infectious agent, and for monitoring activated CD4+ T-cells. In example, **monoclonal antibody** to PHA-transformed T lymphocyte was prepd. and used for identification of polypeptide **ACT-4-h-1 receptor**. Time course of **ACT-4-h-1 receptor** expression in CD4+ T cell activation, **cloning** of **ACT-4-h-1 cDNA**, anal. of **ACT-4-h-1 cDNA** sequence, prodn. of stable **ACT-4-h-1** transfectants and **fusion** protein with Ig, identification of cell types expressing ligand to **ACT-4-h-1**, **cloning** of **ACT-4-h-1** ligand cDNA, and anal. of **ACT-4-h-1** ligand sequence were performed.

ST activated CD4 T cell **receptor** ligand; immune disease  
**ACT4 receptor** ligand; sequence **ACT4 receptor** ligand T lymphocyte

IT Antigens  
RL: BSU (Biological study, unclassified); BIOL (Biological study) (-specific immunity induction; identification and anal. of ligand to activated CD4+ T cell surface receptor and use for immune diseases)

IT Glycoproteins, specific or class  
RL: BPR (Biological process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
**(ACT-4-L-h-1 (activated antigen CD4-pos. human T-cell receptor ligand human 1); sequence of ACT-4-h-1 CD4-pos. human T-cell receptor and its ligand ACT-4-L-h**

-1 and isolation of antibodies to **ACT-4**  
-L-h-1)

IT **Receptors**

RL: BPR (Biological process); PRP (Properties); BIOL (Biological study);  
PROC (Process)

(**ACT-4-h-1** (activated antigen  
CD4-pos. T-cell, human-1); amino acid sequence of **ACT-4-h-1** CD4-pos. human T-cell  
**receptor** and its ligand **ACT-4-L-h-1**  
-1 and isolation of antibodies to **ACT-4**  
-L-h-1 for monitoring or modulating immune  
response)

IT **Infection**

(agents induce; identification and anal. of ligand to activated CD4+ T  
cell surface receptor and use for immune diseases)

IT **Toxins**

RL: MOA (Modifier or additive use); USES (Uses)  
(conjugates; identification and anal. of ligand to activated CD4+ T  
cell surface receptor and use for immune diseases)

IT **Autoimmune disease**

Immunomodulators

Immunosuppressants

Inflammation

(identification and anal. of ligand to activated CD4+ T cell surface  
receptor and use for immune diseases)

IT **Protein sequences**

(of **ACT-4-h-1 receptor**  
and **ACT-4-L-h-1** ligand of human  
CD4+ T cells)

IT **Transplant and Transplantation**

(rejection; identification and anal. of ligand to activated CD4+ T cell  
surface receptor and use for immune diseases)

IT **Lymphocyte**

(B-cell, identification and anal. of ligand to activated CD4+ T cell  
surface receptor and use for immune diseases)

IT **Lymphocyte**

(T-cell, identification and anal. of ligand to activated CD4+ T cell  
surface receptor and use for immune diseases)

IT **Deoxyribonucleic acid sequences**

(complementary, for **ACT-4-h-1**  
**receptor** and **ACT-4-L-h-1**  
ligand of human CD4+ T cells)

IT **Immunoglobulins**

RL: MOA (Modifier or additive use); USES (Uses)  
(conjugates, identification and anal. of ligand to activated CD4+ T  
cell surface receptor and use for immune diseases)

IT **Intestine, disease**

(enteritis, identification and anal. of ligand to activated CD4+ T cell  
surface receptor and use for immune diseases)

IT **Transplant and Transplantation**

(graft-vs.-host reaction, identification and anal. of ligand to  
activated CD4+ T cell surface receptor and use for immune diseases)

IT **Virus, animal**

(human T-cell leukemia, identification and anal. of ligand to activated  
CD4+ T cell surface receptor and use for immune diseases)

IT **Virus, animal**

(human immunodeficiency, identification and anal. of ligand to  
activated CD4+ T cell surface receptor and use for immune diseases)

IT **Antibodies**

RL: BPN (Biosynthetic preparation); THU (Therapeutic use); BIOL  
(Biological study); PREP (Preparation); USES (Uses)

(**monoclonal**, to **ACT-4-h-1**  
CD4-pos. human T-cell **receptor** or its ligand)

ACT-4-L-h-1 and isolation of  
antibodies to ACT-4-L-h-1

)

IT 166025-61-2

RL: PRP (Properties)

(amino acid sequence; sequence of ACT-4-h  
-1 CD4-pos. human T-cell **receptor** and its ligand  
ACT-4-L-h-1 and isolation of  
antibodies to ACT-4-L-h-1 for  
monitoring or modulating immune response)

IT 170679-42-2

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES  
(Uses)

(amino acid sequence; sequence of ACT-4-h  
-1 CD4-pos. human T-cell **receptor** and its ligand  
ACT-4-L-h-1 and isolation of  
antibodies to ACT-4-L-h-1 for  
monitoring or modulating immune response)

IT 166025-60-1

RL: PRP (Properties)

(nucleotide sequence; sequence of ACT-4-h  
-1 CD4-pos. human T-cell **receptor** and its ligand  
ACT-4-L-h-1 and isolation of  
antibodies to ACT-4-L-h-1 for  
monitoring or modulating immune response)

IT 156828-73-8

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES  
(Uses)

(nucleotide sequence; sequence of ACT-4-h  
-1 CD4-pos. human T-cell **receptor** and its ligand  
ACT-4-L-h-1 and isolation of  
antibodies to ACT-4-L-h-1 for  
monitoring or modulating immune response)

L33 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:726238 HCAPLUS

DN 123:110151

TI A **receptor**, ACT-4, on the surface of  
activated T-cells and its properties and uses

IN **Godfrey, Wayne; Buck, David William; Engleman,  
Edgar George**

PA Board of Trustees of the Leland Stanford Junior University, USA; Becton  
Dickinson and Co.

SO PCT Int. Appl., 82 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N015-13

ICS C07K014-725; C07K016-28; G01N033-577; G01N033-68; A61K039-395;  
C12N005-20; C12N005-10

CC 15-2 (Immunochemistry)

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9512673	A1	19950511	WO 1994-GB2415	19941103
W:	AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ			
RW:	KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
US 5821332	A	19981013	US 1993-147784	19931103

AU 9480652	A1	19950523	AU 1994-80652	19941103
EP 726952	A1	19960821	EP 1994-931650	19941103
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 09504693	T2	19970513	JP 1994-513094	19941103
US 6277962	B1	20010821	US 1995-472940	19950606
AU 9894138	A1	19990218	AU 1998-94138	19981126
AU 9918436	A1	19990506	AU 1999-18436	19990225
US 2001044523	A1	20011122	US 2001-804200	20010313
US 2001044522	A1	20011122	US 2001-852845	20010511
PRAI US 1993-147784	A	19931103		
US 1994-195967	A3	19940210		
AU 1994-80652	A3	19941103		
WO 1994-GB2415	W	19941103		
AU 1995-15836	A3	19950206		
US 1995-472940	A1	19950606		

AB **ACT-4**, a **receptor** found on the surface of activated T-cells and cDNAs encoding it and **antibodies** against it are characterized for diagnostic and therapeutic use. **ACT-4 receptors** are preferentially expressed on the surface of activated CD4+ T-cells. **ACT-4 receptors** are usually expressed at low levels on the surface of activated CD8+ cells, and are usually substantially absent on resting T-cells, and on monocytes and B-cells (resting or activated). An exemplary **ACT-4 receptor**, termed **ACT-4-h-1**, has a signal sequence, an extracellular domain comprising three disulfide-bonded intrachain loops, a transmembrane domain, and an intracellular domain. **Monoclonal antibodies** to the **receptor** were used to det. patterns and regulation of synthesis of the **receptor**. Synthesis was induced by alloantigens and a no. of other stimuli. **Cloning** of the cDNA and manuf. of the protein by expression of the cDNA or as a **fusion** protein with an Ig are described.

ST **receptor** activated T cell human; **ACT4** activated T cell

IT **receptor**; cDNA **ACT4 receptor** human

IT Plasmid and Episome  
(5K-41BB-Eg1, **chimeric** gene for **fusion** protein of Ig and **ACT-4 receptor** on; **receptor ACT-4** on surface of activated T-cells and its properties and uses)

IT **Receptors**  
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)  
(**ACT-4**, activated CD4+ T-cell; **receptor ACT-4** on surface of activated T-cells and its properties and uses)

IT Plasmid and Episome  
(**ACT-4-h-1-neo**, cDNA for human **ACT4 receptor** on; **receptor ACT-4** on surface of activated T-cells and its properties and uses)

IT Antigens  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(activated T-cell; **receptor ACT-4** on surface of activated T-cells and its properties and uses)

IT Immunostimulants  
Immunosuppressants  
(**monoclonal antibody** to **ACT-4 receptor**; **receptor ACT-4** on surface of activated T-cells and its properties and uses)

IT Protein sequences  
(of **ACT-4 receptor** of human; **receptor ACT-4** on surface of activated T-cells and its properties and uses)

- IT Antibodies  
RL: BPN (Biosynthetic preparation); BUU (Biological use, unclassified);  
BIOL (Biological study); PREP (Preparation); USES (Uses)  
(to **ACT-4 receptor** of activated T-cells;  
**receptor ACT-4** on surface of activated  
T-cells and its properties and uses)
- IT Lymphocyte  
(B-cell, **receptor** found on activated T-cells missing from;  
**receptor ACT-4** on surface of activated  
T-cells and its properties and uses)
- IT Immunoglobulins  
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified);  
BIOL (Biological study); PREP (Preparation)  
(G1, **fusion** products with **ACT-4**  
**receptor; receptor ACT-4** on  
surface of activated T-cells and its properties and uses)
- IT Lymphocyte  
(T-cell, CD4+, activated; **receptor ACT-4**  
on surface of activated T-cells and its properties and uses)
- IT Deoxyribonucleic acid sequences  
(complementary, for **ACT-4 receptor** of  
human; **receptor ACT-4** on surface of  
activated T-cells and its properties and uses)
- IT Antibodies  
RL: BPN (Biosynthetic preparation); BUU (Biological use, unclassified);  
BIOL (Biological study); PREP (Preparation); USES (Uses)  
(**monoclonal**, to **ACT-4 receptor**  
of activated T-cells; **receptor ACT-4** on  
surface of activated T-cells and its properties and uses)
- IT 166025-61-2  
RL: BOC (Biological occurrence); PRP (Properties); THU (Therapeutic use);  
BIOL (Biological study); OCCU (Occurrence); USES (Uses)  
(amino acid sequence; **receptor ACT-4** on  
surface of activated T-cells and its properties and uses)
- IT 166025-60-1  
RL: BOC (Biological occurrence); PRP (Properties); THU (Therapeutic use);  
BIOL (Biological study); OCCU (Occurrence); USES (Uses)  
(nucleotide sequence; **receptor ACT-4** on  
surface of activated T-cells and its properties and uses)

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FILE 'BIOSIS' ENTERED AT 15:36:44 ON 18 JUN 2002

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FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 12 June 2002 (20020612/ED)

=> d all tot

L52 ANSWER 1 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 2002:126516 BIOSIS

DN PREV200200126516

TI **Receptor** on the surface of activated CD4-+T-cells: **ACT**  
**-4.**

AU **Godfrey, W.; Buck, D.; Engleman, E. G.**

CS Woodside, Calif. USA

ASSIGNEE: THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY

PI US 5821332 Oct. 13, 1998  
SO Official Gazette of the United States Patent and Trademark Office Patents,  
(Oct. 13, 1998) Vol. 1215, No. 2, pp. 1859.  
ISSN: 0098-1133.  
DT Patent  
LA English  
NCL 530350000  
CC Biochemical Studies - Proteins, Peptides and Amino Acids \*10064  
Pharmacology - General \*22002  
Cytology and Cytochemistry - Human \*02508  
IT Major Concepts  
Biochemistry and Molecular Biophysics; Cell Biology; Pharmacology  
IT Sequence Data  
AMINO ACID SEQUENCE  
IT Miscellaneous Descriptors  
ACT-4 RECEPTOR POLYPEPTIDE; ACTIVATED  
CD4-PLUS-T-CELLS; PHARMACEUTICALS

L52 ANSWER 2 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 2001:549491 BIOSIS  
DN PREV200100549491  
TI Ligand (ACT-4-L) to a **receptor** on the  
surface of activated CD4+ T-cells.  
AU Godfrey, Wayne; Engleman, Edgar G.  
ASSIGNEE: Board of Trustees of the Leland Stanford Junior University, Palo  
Alto, CA, USA  
PI US 6242566 June 05, 2001  
SO Official Gazette of the United States Patent and Trademark Office Patents,  
(June 5, 2001) Vol. 1247, No. 1, pp. No Pagination. e-file.  
ISSN: 0098-1133.  
DT Patent  
LA English  
AB The invention provides ligands and fragments thereof to a **receptor**  
on the surface of activated CD4+ T-cells. An exemplary ligand is  
designated ACT-4-L-h-1. Preferred  
fragments include purified extracellular domains of ligands. The invention  
also provides humanized and human antibodies to the ligand. The invention  
further provides methods of using the ligand and the antibodies in  
treatment of diseases and conditions of the immune system. The invention  
also provides methods of monitoring activated CD4+ T-cells using the  
ligands or fragments thereof.  
NCL 530350000  
IT Major Concepts  
Clinical Immunology (Human Medicine, Medical Sciences); Methods and  
Techniques; Pharmacology  
IT Parts, Structures, & Systems of Organisms  
CD4 positive T-cells: immune system  
IT Chemicals & Biochemicals  
ACT-4-L-h-1: CD4 positive  
T-cell surface **receptor** binding, human antibodies, humanized  
antibodies  
IT Methods & Equipment  
activated CD4 positive T-cell monitoring method: monitoring method;  
immune response suppression: therapeutic method; immunosuppressive agent  
screening: screening method

L52 ANSWER 3 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 2001:482555 BIOSIS  
DN PREV200100482555  
TI **Receptor** on the surface of activated t-cells: act-  
4.  
AU Godfrey, Wayne (1); Buck, David; Engleman, Edgar  
G.



CS (1) Woodside, CA USA  
ASSIGNEE: The Board of Trustees of Leland Stanford Junior University, Palo Alto, CA, USA; Becton Dickinson and Company

PI US 6277962 August 21, 2001

SO Official Gazette of the United States Patent and Trademark Office Patents, (Aug. 21, 2001) Vol. 1249, No. 3, pp. No Pagination. e-file.  
ISSN: 0098-1133.

DT Patent

LA English

AB The invention provides purified **ACT-4 receptor** polypeptides, antibodies against these polypeptides and nucleic acids encoding **ACT-4 receptor** polypeptides. Also provided are methods of diagnosis and treatment using the same. **ACT-4 receptors** are preferentially expressed on the surface of activated CD4+ T-cells. **ACT-4 receptors** are usually expressed at low levels on the surface of activated CD8+ cells, and are usually substantially absent on resting T-cells, and on monocytes and B-cells (resting or activated). An exemplary **ACT-4 receptor**, termed **ACT-4-h-1**, has a signal sequence, an extracellular domain comprising three disulfide-bonded intrachain loops, a transmembrane domain, and an intracellular domain.

NCL 530388000

IT Major Concepts  
Molecular Genetics (Biochemistry and Molecular Biophysics); Clinical Immunology (Human Medicine, Medical Sciences); Methods and Techniques

IT Parts, Structures, & Systems of Organisms  
CD4 positive T-cells: activated, detection, immune system

IT Chemicals & Biochemicals  
**ACT-4 receptor** polypeptides:  
antibodies, encoding nucleic acids, extracellular domains;  
**ACT-4-h-1: monoclonal antibodies**

IT Methods & Equipment  
immunosuppressive agent screening: screening method

L52 ANSWER 4 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 2001:296823 BIOSIS

DN PREV200100296823

TI Ligand (**ACT-4-L**) to a **receptor** on the surface of activated CD4+ T-cells.

AU Godfrey, Wayne (1); Engleman, Edgar G.; Buck, David

CS (1) White Bear Lake, MN USA  
ASSIGNEE: The Board of Trustees of the Leland Stanford Junior University; Becton Dickinson and Company

PI US 6156878 December 05, 2000

SO Official Gazette of the United States Patent and Trademark Office Patents, (Dec. 5, 2000) Vol. 1241, No. 1, pp. No Pagination. e-file.  
ISSN: 0098-1133.

DT Patent

LA English

AB The invention provides ligands and fragments thereof to a **receptor** on the surface of activated CD4+ T-cells. An exemplary ligand is designated **ACT-4-L-h-1**. Preferred fragments include purified extracellular domains of ligands. The invention also provides humanized and human antibodies to the ligand. The invention further provides methods of using the ligand and the antibodies in treatment of diseases and conditions of the immune system. The invention also provides methods of monitoring activated CD4+ T-cells using the ligands or fragments thereof.

NCL 530350000

IT Major Concepts

Methods and Techniques; Pharmacology  
 IT Parts, Structures, & Systems of Organisms  
     CD4-T cells: blood and lymphatics, immune system  
 IT Diseases  
     immune system disease: immune system disease  
 IT Chemicals & Biochemicals  
     ligand **ACT-4-L-h-1**: immunologic  
     - drug  
 IT Methods & Equipment  
     activated CD4-T cell monitoring method: monitoring method

L52 ANSWER 5 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1994:91282 BIOSIS  
 DN PREV199497104282  
 TI Molecular **cloning** of a cDNA encoding the human homolog of the  
     rat OX-40 antigen.  
 AU **Godfrey, Wayne (1); Buck, David; Harara, Marwan (1);**  
     **Engleman, Edgar (1)**  
 CS (1) Stanford Univ. Blood Cent., Palo Alto, CA USA  
 SO Tissue Antigens, (1993) Vol. 42, No. 4, pp. 253.  
 Meeting Info.: 5th International Conference on Human Leukocyte  
 Differentiation Antigens Boston, Massachusetts, USA November 3-7, 1993  
 ISSN: 0001-2815.  
 DT **Conference**  
 LA English  
 CC Cytology and Cytochemistry - Animal 02506  
     Cytology and Cytochemistry - Human 02508  
     Genetics and Cytogenetics - Animal 03506  
     Genetics and Cytogenetics - Human \*03508  
     Biochemical Studies - Nucleic Acids, Purines and Pyrimidines \*10062  
     Biochemical Studies - Proteins, Peptides and Amino Acids 10064  
     Biophysics - Molecular Properties and Macromolecules \*10506  
     Biophysics - Membrane Phenomena \*10508  
     Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies \*15004  
     Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and  
     Reticuloendothelial System \*15008  
     Endocrine System - General \*17002  
     Immunology and Immunochemistry - Immunopathology, Tissue Immunology  
     \*34508  
 BC Hominidae 86215  
     Muridae \*86375  
 IT Major Concepts  
     Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport  
     and Circulation); Clinical Immunology (Human Medicine, Medical  
     Sciences); Endocrine System (Chemical Coordination and Homeostasis);  
     Genetics; Membranes (Cell Biology)  
 IT Miscellaneous Descriptors  
     CD27; CD30; CD40; COMPLEMENTARY DNA; **L106 MOLECULE**; MEETING  
     ABSTRACT; NERVE GROWTH FACTOR RECEPTOR FAMILY; NOVEL SUPERFAMILY;  
     PERIPHERAL BLOOD LYMPHOCYTE; SEQUENCE IDENTITY; SPLENOCYTE

ORGN Super Taxa  
     Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia; Muridae:  
     Rodentia, Mammalia, Vertebrata, Chordata, Animalia  
 ORGN Organism Name  
     murine (Muridae); Hominidae (Hominidae)  
 ORGN Organism Superterms  
     animals; chordates; humans; mammals; nonhuman mammals; nonhuman  
     vertebrates; primates; rodents; vertebrates

=> fil wpix

FILE 'WPIX' ENTERED AT 15:43:45 ON 18 JUN 2002

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=> d all tot 168 abeq tech

L68 ANSWER 1 OF 2 WPIX (C) 2002 THOMSON DERWENT  
AN 1995-293117 [38] WPIX  
DNN N1995-221675 DNC C1995-132004  
TI Ligand, ACT-4-1, to receptor on activated CD4 positive  
cells - useful in treatment of various immune diseases and conditions.  
DC B04 D16 S03  
IN ENGLEMAN, E G; GODFREY, W; ENGLEMAN, E;  
BUCK, D  
PA (STRD) UNIV LELAND STANFORD JUNIOR; (GRE-A-I) GREAVES C P; (ENGL-I)  
ENGLEMAN E G; (GODF-I) GODFREY W; (BECT) BECTON DICKINSON & CO  
CYC 61  
PI WO 9521915 A1 19950817 (199538)\* EN 124p C12N015-12  
RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ  
W: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KE KG  
KP KR KZ LK LR LT LU LV MD MG MN MW MX NL NO NZ PL PT RO RU SD SE  
SI SK TJ TT UA US UZ VN  
AU 9515836 A 19950829 (199548) C12N015-12  
EP 741784 A1 19961113 (199650) EN C12N015-12  
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE  
JP 09509826 W 19971007 (199750) 90p C12N015-02  
AU 9918436 A 19990506 (199929)# C12N015-12  
US 6156878 A 20001205 (200066) C07K014-705  
US 6242566 B1 20010605 (200133) C07K014-435  
US 2001044523 A1 20011122 (200176) C07K016-18  
AU 2002010060 A 20020228 (200225)# A61K038-17  
ADT WO 9521915 A1 WO 1995-GB238 19950206; AU 9515836 A AU 1995-15836 19950206;  
EP 741784 A1 EP 1995-907739 19950206, WO 1995-GB238 19950206; JP 09509826  
W JP 1995-521040 19950206, WO 1995-GB238 19950206; AU 9918436 A Div ex AU  
1995-15836 19950206, AU 1999-18436 19990225; US 6156878 A Cont of US  
1994-195967 19940210, US 1997-881033 19970623; US 6242566 B1 US  
1994-195967 19940210; US 2001044523 A1 Div ex US 1994-195967 19940210, US  
2001-804200 20010313; AU 2002010060 A Div ex AU 1999-18436 19990225, AU  
2002-10060 20020104  
FDT AU 9515836 A Based on WO 9521915; EP 741784 A1 Based on WO 9521915; JP  
09509826 W Based on WO 9521915; US 2001044523 A1 Div ex US 6242566  
PRAI US 1994-195967 19940210; AU 1999-18436 19990225; US 1997-881033  
19970623; US 2001-804200 20010313; AU 2002-10060 20020104  
REP 3.Jnl.Ref  
IC ICM A61K038-17; C07K014-435; C07K014-705; C07K016-18; C12N015-02;  
C12N015-12

ICS A61K038-00; A61K038-16; A61K038-21; A61K039-395; C07K016-28;  
C07K019-00; C12N005-08; C12N005-10; C12N015-09; C12N015-85;  
C12P021-02; C12P021-08; G01N033-53; G01N033-543; G01N033-566;  
G01N033-577; G01N033-68

ICA C07H021-04

ICI C12P021-02, C12R001:91; C12P021-08, C12R001:91

AB WO 9521915 A UPAB: 19950927

A specific binding partner (sbp) for an **ACT-4** receptor polypeptide is new. The sbp is other than the monoclonal antibody (MAb) L106 produced by hybridoma HBL106 (ATCC HB11483) and it has an amino acid sequence (I) other than the 183 sequence given in the specification.

USE - The sbp is useful, in a pharmaceutical compsn. (claimed), for ex vivo therapy to modify a patient's immune response. The sbp has application in treatment of transplant rejection, GVHD, autoimmune disease, inflammation, infectious agents, HTVL infected cells or HIV. Specifically, inflammatory bowel disease (IBD) can be treated using the sbp. The sbp is also useful for screening for immunomodulatory agents able to recognise **ACT-4** (claimed). It is also useful for monitoring activated CD4- positive cells or inhibiting infection of CD4 positive cells. The binding moiety can be used to induce an immune response to a selected antigen (Ag).

Dwg.0/10

FS CPI EPI

FA AB

MC CPI: B04-E02; B04-E08; B04-F05; B04-N03; B12-K04A; B14-A01; B14-A02;  
B14-C03; B14-G02D; B14-G03; D05-H09; D05-H12A; D05-H12E; D05-H14;  
D05-H14B; D05-H17A4  
EPI: S03-E14H; S03-E14H4

L68 ANSWER 2 OF 2 WPIX (C) 2002 THOMSON DERWENT

AN 1995-185777 [24] WPIX

DNN N1995-145444 DNC C1995-086349

TI Isolated **ACT-4** receptor from activated T-cells - also its ligands and antibodies, useful for treating diseases of the immune system.

DC B04 D16 S03

IN **BUCK, D W; ENGLEMAN, E G; GODFREY, W;**  
**BUCK, D**

PA (BECT) BECTON DICKINSON & CO; (STRD) UNIV LELAND STANFORD JUNIOR; (BECT) BECTON DICKINSON CO; (BUCK-I) BUCK D; (ENGL-I) ENGLEMAN E G; (GODF-I) GODFREY W

CYC 60

PI WO 9512673 A1 19950511 (199524)\* EN 82p C12N015-13

RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ

W: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KE KG

KP KR KZ LK LR LT LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI

SK TJ TT UA US UZ VN

AU 9480652 A 19950523 (199535) C12N015-13

EP 726952 A1 19960821 (199638) EN C12N015-13

R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

JP 09504693 W 19970513 (199729) 79p C12N015-09

US 5821332 A 19981013 (199848) C07K014-705 <--

AU 9894138 A 19990218 (199919) C07K014-725 <--

US 6277962 B1 20010821 (200150) C07K016-00 <--

AU 2001023233 A 20011004 (200166)# C07K014-725 <--

US 2001044522 A1 20011122 (200176) G01N033-567

ADT WO 9512673 A1 WO 1994-GB2415 19941103; AU 9480652 A AU 1994-80652 19941103; EP 726952 A1 EP 1994-931650 19941103; WO 1994-GB2415 19941103; JP 09504693 W WO 1994-GB2415 19941103; JP 1995-513094 19941103; US 5821332 A US 1993-147784 19931103; AU 9894138 A Div ex AU 1994-80652 19941103, AU 1998-94138 19981126; US 6277962 B1 Div ex US 1993-147784 19931103, US 1995-472940 19950606; AU 2001023233 A Div ex AU 1998-94138 19981126, AU 2001-23233 20010226; US 2001044522 A1 Div ex US 1993-147784 19931103, Cont

of US 1995-472940 19950606, US 2001-852845 20010511  
 FDT AU 9480652 A Based on WO 9512673; EP 726952 A1 Based on WO 9512673; JP 09504693 W Based on WO 9512673; US 6277962 B1 Div ex US 5821332; US 2001044522 A1 Div ex US 5821332, Cont of US 6277962  
 PRAI US 1993-147784 19931103; US 1995-472940 19950606; AU 2001-23233 20010226; US 2001-852845 20010511  
 REP 12Jnl.Ref  
 IC ICM C07K014-705; C07K014-725; C07K016-00; C12N015-09; C12N015-13; G01N033-567  
 ICS A61K038-00; A61K039-395; C07H021-04; C07K007-00; C07K014-00; C07K016-28; C07K016-34; C12N005-10; C12N005-20; C12N015-12; C12P021-02; C12P021-08; G01N033-564; G01N033-566; G01N033-577; G01N033-68  
 ICI C12N005-10, C12R001:91  
 AB WO 9512673 A UPAB: 19950626  
 An isolated e.g. purified, polypeptide (I) comprises: (a) an **ACT-4** receptor or extracellular domain having at least five contiguous amino acids from the 277 amino acid sequence shown in the specification and/or an antigenic determinant in common with a protein comprising the 277 amino acid sequence; or (b) an epitope specifically bindable by antibody L106.  
 Also claimed are: (1) an **ACT-4** ligand capable of specific binding to (I) which is an **ACT-4-h-1** receptor polypeptide; etc.  
 USE - (I) and its ligands or fragments, anti-**ACT-4** receptor antibodies and idiotypic antibodies are useful for treatment of transplant rejection; graft versus host disease; autoimmune diseases, such as insulin-dependent diabetes mellitus, multiple sclerosis, stiff man syndrome, rheumatoid arthritis, myasthenia gravis and lupus erythematosus; inflammation and infectious agents. In addition, the use of (I) is claimed for screening an antibody for specific binding to the same epitope as that bound by an L106 antibody, localising an epitope specifically bound by an L106 antibody, screening for immunosuppressive agents, screening for an **ACT-4** ligand and detecting a specific binding partner of **ACT-4-h-1** receptor polypeptide.  
 Dwg.0/8  
 FS CPI EPI  
 FA AB  
 MC CPI: B04-E03A; B04-F05; B04-G04; B04-G21; B04-K01; B14-C03; B14-C09B; B14-G02; B14-S01; B14-S04; D05-H09; D05-H11A1; D05-H12A; D05-H14B2; D05-H15; D05-H17A4  
 EPI: S03-E14H4

=> d his

(FILE 'HOME' ENTERED AT 15:18:36 ON 18 JUN 2002)  
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 15:18:48 ON 18 JUN 2002

L1 0 S ACT4H1  
 L2 0 S ACT4(L)H1  
 L3 81 S ACT(L)4(L)H1  
 L4 135 S ACT(L)4(L)H 1  
 L5 1 S ACT4 (L) H 1  
 L6 216 S L3-L5  
 L7 0 S L6 AND MAB  
 L8 2 S L6 AND MONOCLON?(L)ANTIBOD?  
 L9 2 S (ACT4 OR ACT 4) (L) (H1 OR H 1)  
 L10 2 S L8,L9  
 L11 0 S HB11483  
 L12 0 S HB 11483  
 L13 0 S HBL106

L14 0 S "HB L106"  
L15 6 S "L106"  
L16 1 S L15 AND MAB  
L17 3 S L15 AND MONOCLON?(L)ANTIBOD?  
L18 3 S L16,L17  
L19 1 S L18 AND PROTEIN  
L20 3 S L10,L19  
E GODFREY W/AU  
L21 23 S E3-E5,E7,E8  
E BUCK D/AU  
L22 95 S E3-E11,E19-E26  
E ENGLEMAN E/AU  
L23 126 S E3,E5,E8-E11  
L24 3 S L20 AND L21-L23  
L25 3 S L6,L15 AND L21-L23  
L26 3 S L24,L25  
L27 9 S L6,L15 AND (FUSION OR CHIMER? OR CLON? OR RECOMBIN? OR ENGINE  
L28 2 S L26 AND L27  
L29 3 S L26,L28  
L30 7 S L27 NOT L29  
L31 3 S RECEPTOR (L) (ACT4 OR ACT 4)  
L32 2 S L31 NOT 4/SC  
L33 3 S L29,L32

FILE 'HCAPLUS' ENTERED AT 15:30:03 ON 18 JUN 2002

FILE 'BIOSIS' ENTERED AT 15:30:40 ON 18 JUN 2002

L34 5 S L31  
L35 245 S L1-L5  
L36 3 S L9  
L37 0 S L11-L14  
L38 6 S L15  
L39 253 S L34,L35,L36,L38  
L40 5 S L39 AND (MAB OR MONOCLON?(L)ANTIBOD?)  
L41 13 S L39 AND (FUSION OR CHIMER? OR CLON? OR RECOMBIN? OR ENGINEER?  
L42 18 S L40,L41  
L43 5 S L39 AND 00520/CC  
L44 7 S L39 AND CONFERENCE/DT  
E GODFREY W/AU  
L45 57 S E3-E11  
E BUCK D/AU  
L46 213 S E3-E16,E21-E29  
E ENGLEMAN E/AU  
L47 321 S E3,E8,E12-E16  
L48 5 S L39 AND L45-L47  
L49 2 S L48 AND L42-L44  
L50 9 S L43,L44,L48 NOT L49  
SEL DN AN 2 5 6  
L51 3 S L50 AND E1-E6  
L52 5 S L49,L51

FILE 'BIOSIS' ENTERED AT 15:36:44 ON 18 JUN 2002

FILE 'MEDLINE' ENTERED AT 15:37:15 ON 18 JUN 2002

L53 194 S L39  
L54 4 S L53 AND (MAB OR MONOCLON?(L)ANTIBOD?)  
L55 190 S L53 NOT L54  
L56 0 S L55 AND (GODFREY W? OR BUCK D? OR ENGLEMAN E?)/AU  
L57 0 S L53 AND (GODFREY W? OR BUCK D? OR ENGLEMAN E?)/AU  
L58 0 S (ACT4 OR ACT 4) (L) (H1 OR H 1)

FILE 'WPIX' ENTERED AT 15:39:28 ON 18 JUN 2002

L59 2 S L58

L60	1 S L59 AND C07K/IC, ICM, ICS
	E BUCK D/AU
L61	16 S E3, E14
	E ENGLEMAN E/AU
L62	20 S E3, E4
	E GODFREY W/AU
L63	11 S E3-E6
L64	41 S L61-L63
L65	10 S L64 AND C07K/IC, ICM, ICS
L66	6 S ACT4 OR ACT 4
L67	2 S L66 AND L64
L68	2 S L60, L67
L69	4 S L66 NOT L68

FILE 'WPIX' ENTERED AT 15:43:45 ON 18 JUN 2002